

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Baolin Tan, et al.

Application No. 10/559,715

Filed: June 5, 2006

For: DIGITAL PROCESSING DISRUPTION
SYSTEM

Examiner: Zhao, Daquan

Art Unit: 2484

Confirmation No. 3838

AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office action of March 17, 2011, please consider the following remarks and amend the above-identified application as follows:

Amendments to the Claims begin on page 2 of this paper.

Remarks begin on page 8 of this paper.

Amendments to the Claims:

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Previously Presented) A method of modifying an analogue video signal to impair analogue to digital conversion of the signal, the signal comprising a plurality of horizontal synchronization pulses, each adjacent a respective back porch, the method comprising:

receiving an original video signal for modification;

modifying at least one of the horizontal synchronization pulses from its original form to have a greater or a smaller amplitude over at least a part of the pulse width;

modifying the region of the signal following the horizontal synchronization pulse, either in the back porch or adjacent to it, from its original form, by inserting a first pulse into lines which appear in the overscan region of the signal, wherein the first pulse is a wave having a frequency in the range 1 MHz to 6MHz; and

outputting the modified video signal, wherein the modified video signal is such that the modified video signal interferes with the operation of an analogue to digital video conversion system to such an extent that, if a digital signal is output, the output digital signal has a reduced quality on playback in comparison to the original analogue video signal.

2-33. (Cancelled)

34. (Previously Presented) A method according to claim 1, comprising consulting an analogue to digital conversion device response model, and modifying the amplitude of the synchronization pulse, or modifying the region of the signal following the horizontal pulse, in dependence on the analogue to digital conversion device response model.

35. (Previously Presented) A method according to claim 1, comprising consulting a display device response model, and modifying the amplitude of the synchronization pulse, or

modifying the region of the signal following the horizontal pulse, in dependence on the display device model.

36. (Previously Presented) A method according to claim 1 comprising consulting several response models and varying the modifications over time.

37. (Previously Presented) A method according to claim 1, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted to be in the range -280 mV to -150 mV.

38. (Previously Presented) A method according to claim 1, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted to be in the range -250 mV to -200 mV.

39. (Previously Presented) A method according to claim 37, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted over a duration of about 30% to 100% of the pulse width.

40. (Previously Presented) A method according to claim 1, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted to be in the range -320 mV to -600 mV.

41. (Previously Presented) A method according to claim 1, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted to be in the range -350 mV to -450 mV.

42. (Previously Presented) A method according to claim 40, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted over a duration of about 30% to 90% of the pulse width.

43. (Previously Presented) A method according to claim 40, wherein in the modifying step, the amplitude of the synchronization pulse is adjusted only after the beginning of the synchronization pulse.

44. (Previously Presented) A method according to claim 1, wherein the back porch of the signal is modified by adjusting the signal level away from the OV level.

45. (Previously Presented) A method according to claim 44, wherein the back porch of the signal is modified by adding a pulse of positive or negative amplitude in the range 30 mV to 200 mV.

46. (Previously Presented) A method according to claim 45, wherein the amplitude of the pulse is in the range 50 to 150 mV.

47. (Previously Presented) A method according to claim 45, wherein the pulse has a duration of between 250 ns and 4 μ s.

48. (Previously Presented) A method according to claim 45, wherein the pulse occurs immediately after the synchronization pulse.

49. (Previously Presented) A method according to claim 45, wherein the pulse occurs 4.8 μ s after the falling edge of the synchronization pulse.

50. (Previously Presented) A method according to claim 1, wherein the region of the signal following the synchronization pulse is modified by inserting a pulse into lines which appear in the overscan region of the signal.

51. (Previously Presented) A method according to claim 50, wherein the pulse is inserted between 10 μ s and 30 μ s after the falling edge of the synchronization pulse.

52. (Previously Presented) A method according to claim 50, wherein the pulse has a duration of between 10 μ s and 58 μ s.

53. (Previously Presented) A method according to claim 50, wherein the pulse has a duration of between 15 μ s and 35 μ s.

54. (Previously Presented) A method according to claim 1 comprising inputting the output modified video signal into an analogue to digital converter.

55. (Previously Presented) A method according to claim 1 wherein the amplitude of the modifications are varied over time between zero, at which the modified signal is substantially identical to an unmodified signal, and full scale at which the modifications are fully present.

56. (Currently Amended) A computer program product, comprising computer readable code embodied on a non-transitory computer readable storage medium, the computer readable code, when executed on a computer, causes the computer to perform the steps of method claim 1.

57. (Previously Presented) An apparatus arranged to modify an analogue video signal to impair analogue to digital conversion of the signal, the signal comprising a plurality of

horizontal synchronization pulses, each adjacent a respective back porch, the apparatus comprising:

an input for receiving an original video signal for modification;

means for modifying at least one of the horizontal synchronization pulses from its original form to have a greater or a smaller amplitude over at least a part of the pulse width;

means for modifying the region of the signal following the horizontal synchronization pulse, either in the back porch or adjacent to it, from its original form, by inserting a first pulse into lines which appear in the overscan region of the signal, wherein the first pulse is a wave having a frequency in the range 1 MHz to 6MHz; and

an output for outputting the modified video signal, wherein the modified video signal is such that the modified video signal interferes with the operation of an analogue to digital video conversion system to such an extent that, if a digital signal is output, the output digital signal has a reduced quality on playback in comparison to the original analogue video signal.

58. (Previously Presented) An apparatus in accordance with claim 57, in which the characteristics of the modifications can be set remotely.

59. Canceled.

60. (Previously Presented) A method of modifying a signal, generated by the method of claim 1, such that analogue to digital conversion can take place, the method comprising:

receiving a video signal; determining which of the amplitude of the synchronization pulse, and the region following the synchronization pulse have been modified; and

modifying the amplitude of the synchronization pulse, and/or modifying the region following the synchronization pulse, in dependence on the determining step, to allow analogue to digital conversion.

61. (Previously Presented) A method according to claim 60, comprising recording the modified signal onto a storage medium.

62. (Previously Presented) An apparatus arranged to modify a signal, generated by the method of claim 1, such that analogue to digital conversion can take place, the apparatus comprising:

an input for receiving a video signal; an analyzer for determining which of the amplitude of the synchronization pulse, and the region following the synchronization pulse have been modified; and

means for modifying the amplitude of the synchronization pulse, and/or modifying the region following the synchronization pulse, in dependence on the determination of the analyzer, to allow analogue to digital conversion.

63. Canceled.

64. Canceled.

65. Canceled.

66. (Previously Presented) The method of claim 1, wherein the frequency of the wave is 400MHz.

67. (Previously Presented) The method of claim 1, wherein the amplitude of the wave is in the range 0 to -300mV.

68. (Previously Presented) The method of claim 1, wherein the amplitude of the wave is -200mV.

REMARKS/ARGUMENTS

This Amendment and Response is responsive to the final Office Action dated March 17, 2011, setting forth a shortened three-month statutory period for reply. The Assignee thanks the Examiner for reviewing this application and issuing an Office Action.

Claims 1, 34-58, 60-62 and 66-68 are pending in the application, with claims 1 and 57 being independent claims. By this Amendment, claims 56 is amended. No claims are cancelled, and no new claims are added. Accordingly, after entry of this Amendment and Response, claims 1, 34-58, 60-62 and 66-68 remain pending, with claims 1 and 57 being independent claims.

I. Allowable Subject Matter

Claims 1, 34-55, 57, 58, 60-62 and 66-68 are allowed. The Assignee thanks the Examiner for the indication of allowable subject matter. Prompt allowance is respectfully requested.

II. Claim Rejections Under 35 U.S.C. § 101

Claim 56 is rejected under 35 U.S.C. § 101 because the claim is allegedly directed to non-statutory subject matter. In order to expedite prosecution, Claim 56 is amended to recite a “non-transitory computer readable storage medium.” Claim 56 is amended without intending to abandon or dedicate to the public any patentable subject matter. The Assignee reserves the right to pursue the previously recited subject matter in a subsequently filed continuation application. The Assignee respectfully requests withdrawal of the rejection under 35 U.S.C. § 101, and the allowance of claim 56.

CONCLUSION

After entry of the above listing of claims and remarks, claims 1, 34-58, 60-62 and 66-68 remain in the application. In accordance with the amendments and arguments set forth herein, the Assignee respectfully submits the application and all claims are in a condition for allowance, and requests such prompt allowance.

The Assignee believes no fees or petitions are due with this filing. However, should any such fees or petitions be required, please consider this a request therefor and authorization to charge Deposit Account No. 04-1415 as necessary.

Should any issues remain that the Examiner believes may be dealt with in a telephone conference, he is invited to contact the undersigned at 303-629-3400.

Dated this 16th day of May, 2011.

Respectfully submitted,

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